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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
LU, FRANK WEI MIN	

ART UNIT	PAPER NUMBER
1634	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/016,416	BAMDAD ET AL.	
	Examiner	Art Unit	
	FRANK W. LU	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 February 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *18 and 20-27* is/are pending in the application.

4a) Of the above claim(s) *26* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *18,20-25 and 27* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *10 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. Applicant's response to the office action filed on February 27, 2008 has been entered. The claims pending in this application are claims 18 and 20-27 wherein claim 26 has been withdrawn due to species election mailed on October 22, 2003. Claims 18, 20-25, and 27 will be examined.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 18, 20, 24, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sigal *et al.,* (US Patent No.6,319,670 B1, filed on December 23, 1997) in view of Meade *et al.,* (US Patent No. 5,770,369, filed on June 7, 1996) and Roberts *et al.,* (US Patent No. 5,958,791, filed on September 27, 1996).

Sigal *et al.,* teach that method and apparatus for improved luminescence assays using microparticles.

Regarding claims 18, 24, and 27, Sigal *et al.,* teach a composition comprising (i) a sample, (ii) microparticles (ie., colloidal gold particles) comprised of an electrically conductive material having one or more copies of a first assay-ligand immobilized on its surface and a plurality of ECL moieties immobilized on its surface and (iii) a second assay-ligand immobilized on an electrode wherein said first and second assay-ligands are different in structure and/or

specificity (see column 4, last paragraph and column 12, second paragraph) and the ECL moieties include transition metal complexes (see column 9, first paragraph), and claim 18 does not require that a first binding ligand has an ability to interact with a second binding ligand, Sigal *et al.,* disclose an electrode comprising a first binding ligand (ie., said second assay-ligand) and a plurality of colloids each comprising: i) a second binding ligand (ie., said first assay-ligand); and ii) an electron transfer moiety such as a transition metal complex as recited in a) and b) of claim 18 and claim 24. Since Sigal *et al.,* teach that a first assay-ligand and a second assay-ligand are nucleic acids (see column 3, fourth paragraph), Sigal *et al.,* disclose that said first binding ligand is a first nucleic acid and said second binding ligand is a second nucleic acid as recited in claim 27.

Regarding claim 20, Sigal *et al.,* teach that said plurality of colloids comprise a self-assembled monolayer as recited in claim 20 (see column 8, second paragraph).

Sigal *et al.,* do not disclose a substrate comprising an array of electrodes and a detector capable of detecting the voltage associated with electron transfer from said electron transfer moiety as recited in a) and c) of claim 18. However, Sigal *et al.,* teach electrochemical cells having electrodes for ECL measurement by detecting light emitted from the working electrode surface based on the integrated photocurrent (see column 9, first paragraph and column 17, left column), Sigal *et al.,* disclose a detector capable of detecting said electron transfer moiety (ie., ECL comprising transition metal complex) as recited in c) of claim 18.

Meade *et al.,* teach that a detector capable of detecting the voltage associated with electron transfer from said electron transfer moiety (see column 27, left column).

Roberts *et al.,* teach advantages of fabricating small electrodes in interdigitated arrays (see column 7, last paragraph bridging to column 8, second paragraph).

Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to have made a composition recited in claim 18 comprising a substrate comprising an array of electrodes (ie., a plurality of identical electrodes, each has a second assay-ligand) and a detector capable of detecting the voltage associated with electron transfer from said electron transfer moiety in view of the patents of Sigal *et al.,* Meade *et al.,* and Roberts *et al.*. One having ordinary skill in the art would have been motivated to do so because Roberts *et al.,* suggest that advantages of fabricating small electrodes in interdigitated arrays "[M]icroelectrodes fabricated in an interdigitated array have inherent advantages in signal detection over more conventional electrode configurations… Scaling down the size of an individual electrode has the advantage of increasing the rate of mass transport, increasing the signal-to-noise (faradaic/charging current) ratio, and decreasing ohmic signal losses… Advantages of fabricating small electrodes in interdigitated arrays go even further by allowing redox cycling of ions back and forth between anode(s) and cathode(s)… This generates much larger currents for detection and allows for the use of extremely small sample volumes" (see column 8) and the simple replacement of one kind of detector (ie., the detector capable of detecting the integrated photocurrent associated with electron transfer from said ECL comprising electron transfer moiety taught by Sigal *et al.,*) from another kind of detector (ie., the detector capable of detecting the voltage associated with electron transfer from said electron transfer moiety taught by Meade *et al.,*) during the process of making a composition recited in claim 18 would have been, in the absence of convincing evidence to the contrary, *prima facie* obvious to

one having ordinary skill in the art at the time the invention was made since the methods capable of detecting an electron transfer moiety are exchangeable (see Meade *et al.,* column 25, fifth paragraph) and the detector capable of detecting the integrated photocurrent associated with electron transfer from said ECL comprising electron transfer moiety taught by Sigal *et al.*, and the detector capable of detecting the voltage associated with electron transfer from said electron transfer moiety taught by Meade *et al.,* are used for the same purpose (ie., detecting electron transfer of the transition metal complex).

Furthermore, the motivation to make the substitution cited above arises from the expectation that the prior art elements will perform their expected functions to achieve their expected results when combined for their common known purpose. Support for making the obviousness rejection comes from the M.P.E.P. at 2144.06, 2144.07, and 2144.09.

Also note that there is no invention involved in combining old elements is such a manner that these elements perform in combination the same function as set forth in the prior art without giving unobvious or unexpected results. *In re Rose* 220 F.2d. 459, 105 USPQ 237 (CCPA 1955).

Response to Arguments

In page 4, third paragraph bridging to page 6, last paragraph, and page 8, fourth paragraph bridging to page 11, sixth paragraph of applicant's remarks, applicant argues that: (1) "[A]pplicants contend that even assuming *arguendo* the combination of *Sigal, Meade* and *Roberts* do not teach or suggest the limitation of 'an array of working electrodes,' the gap between the prior art and the claimed invention is still so great as to render the pending claims nonobviousness to one reasonably skilled in the art. First of all, as argued above, the interdigitated 'arrays' in *Roberts* are not 'arrays of working electrodes' as claimed. Secondly, the

advantages of 'increasing the size of mass transport, increasing the signal-to-noise (faradaic/charging current) ratio, and decreasing ohmic signal losses' are in reference to the small scale of the *Roberts* electrodes, rather than to any configuration of working arrays. Thirdly, as presented in more detail below, the principle of operation of *Sigal* is different from that of the claimed invention. *Sigal* depends on the detection of photons; the pending claims are directed to detection of a voltage. The combination of *Sigal, Meade,* and *Roberts* would change the principle of operation of *Sigal,* render compositions and methods for conducting electrochemiluminescence binding assays of *Sigal* unsatisfactory for their intended purpose. Finally, as outlined below, there is no a reasonable expectation of success by combining *Sigal* in view *of Meade.* Thus the gap between the combination of *Sigal, Meade,* and *Roberts* and the claimed invention is still so great as to render the pending claims nonobviousness to one reasonably skilled in the art. Accordingly, the Examiner has failed to establish a *prima facie* case of obviousness. Applicants request withdrawal of the rejection under 103(a) of claim 18 and claims 20-25 and 27 dependent therefrom"; (2) in view of column 1, lines 15-19 and column 2, lines 12-23 and 46-64 of Sigal *et al.,* the principle of operation of Sigal *et al.,* "is the detection of 'electrochemiluminescence,' NOT the detection of 'electron transfer of the transitional metal complex'." and "[N]owhere in *Sigal* can the term 'electron transfer' be found"; (3) "[B]ecause the detector of claim 18 does not detect photons, ligand binding according to *Sigal* could not be detected. Accordingly, the compositions and methods for conducting electrochemiluminescence binding assays of *Sigal* would not achieve their intended purpose if the detector of claim 18 replaced the photomultiplier tube in *Sigal"*; and (4) "[A]s presented above, the detector of claim 18 does not detect photons, ligand binding according to *Sigal* could not be detected.

Accordingly, there is no a reasonable expectation of success by combining *Sigal* in view *of Meade*".

These arguments have been fully considered but they are not persuasive toward the withdrawal of the rejection. First, the rejection is not based on only one patent from Sigal *et al.,* Meade *et al.,* and Roberts *et al.,* but is based on the combination of the patents from Sigal *et al.,* Meade *et al.,* and Roberts *et al.*. Since Roberts *et al.,* suggest that advantages of fabricating small electrodes in interdigitated arrays "[M]icroelectrodes fabricated in an interdigitated array have inherent advantages in signal detection over more conventional electrode configurations… Scaling down the size of an individual electrode has the advantage of increasing the rate of mass transport, increasing the signal-to-noise (faradaic/charging current) ratio, and decreasing ohmic signal losses… Advantages of fabricating small electrodes in interdigitated arrays go even further by allowing redox cycling of ions back and forth between anode(s) and cathode(s)… This generates much larger currents for detection and allows for the use of extremely small sample volumes" (see column 8), Roberts *et al.,* teach the motivation to form an array of working electrode recited in claim 18. Furthermore, applicant has no evidence to show that the small electrodes taught by Roberts *et al.,* cannot be used as working electrodes. In addition, since Sigal *et al.,* teach working electrodes as recited in claim 18 and Meade *et al.,* teach that a detector capable of detecting the voltage associated with electron transfer from said electron transfer moiety (see column 27, left column), it would have been obvious to one having ordinary skill in the art at the time the invention was made to have made a composition recited in claim 18 in view of the patents of Sigal *et al.,* Meade *et al.,* and Roberts *et al.*. Second, although the phrase "electron transfer" has not been found in patent of Sigal *et al.,* since Sigal *et al.,* teach

electrochemical cells having electrodes for ECL measurement by detecting light emitted from the working electrode surface based on the integrated photocurrent (see column 9, first paragraph and column 17, left column) and it is known that ECL process includes electron transfer (see attached ELC Diagram in the office action mailed on September 27, 2007) and ECL is used as the basis of the electron transfer detection (see Meade *et al.,* column 26, lines 62-67), Sigal *et al.,* disclose electron transfer and a detector capable of detecting said electron transfer moiety (ie., ECL comprising transition metal complex) by measuring the integrated photocurrent. Since Meade *et al.,* teach a detector capable of detecting the voltage associated with electron transfer from said electron transfer moiety (see column 27, left column), the detector capable of detecting the integrated photocurrent associated with electron transfer from said ECL comprising electron transfer moiety taught by Sigal *et al.*, and the detector capable of detecting the voltage associated with electron transfer from said electron transfer moiety taught by Meade *et al.,* are used for the same purpose (ie., detecting electron transfer of the transition metal complex) and the replacement of the detector capable of detecting the integrated photocurrent associated with electron transfer from said ECL comprising electron transfer moiety taught by Sigal *et al.*, from the detector capable of detecting the voltage associated with electron transfer from said electron transfer moiety taught by Meade *et al.,* during the process of making a composition recited in claim 18 would not change the principle of operation of the composition and the intended use of Sigal *et al.*. Furthermore, Meade *et al.,* suggest that the methods capable of detecting an electron transfer moiety are exchangeable (see column 25, fifth paragraph). Third, since the detector capable of detecting the integrated photocurrent associated with electron transfer from said ECL comprising electron transfer moiety taught by Sigal *et al.*, and the detector capable of detecting

the voltage associated with electron transfer from said electron transfer moiety taught by Meade *et al.,* are used for the same purpose (ie., detecting electron transfer of the transition metal complex), the detector taught by Sigal *et al.*, and the detector taught by Meade *et al.,* are exchangeable in order to detect electron transfer of the transition metal complex. Fourth, applicant has no evidence to show that the simple replacement of one kind of detector (ie., the detector capable of detecting the integrated photocurrent associated with electron transfer from said ECL comprising electron transfer moiety taught by Sigal *et al.,*) from another kind of detector (ie., the detector capable of detecting the voltage associated with electron transfer from said electron transfer moiety taught by Meade *et al.,*) during the process of making a composition recited in claim 18 would change the intended purpose of Sigal *et al.*, and why "there is no a reasonable expectation of success by combining *Sigal* in view *of Meade*". Therefore, applicant argument "the gap between the combination of *Sigal, Meade,* and *Roberts* and the claimed invention is still so great as to render the pending claims nonobviousness to one reasonably skilled in the art" is incorrect.

4. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sigal *et al.,* in view of Meade *et al.,* and Roberts *et al.,* as applied to claims 18, 20, 24, and 27 above, and further in view of Bamdad *et al.,* (US Patent No. 5,620,850, published on April 15, 1997).

The teachings of Sigal *et al.,* Meade *et al.,* and Roberts *et al.,* have been summarized previously, *supra.*

Sigal *et al.,* Meade *et al.,* and Roberts *et al.,* do not disclose that said self-assembling

monolayer comprises an alkyl chain as recited in claim 21. However, Sigal *et al.,* teach that a self-assembling monolayer is made by functionalized thiol or silane (see column 8, second paragraph).

Bamdad *et al.,* teach that a self-assembling monolayer is made by alkyl thiol functional groups (see columns 9 and 10).

Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to have made a composition as recited in claim 21 wherein said self-assembling monolayer comprises an alkyl chain in view of the patents of Sigal *et al.,* Meade *et al.,* Roberts *et al.,* and Bamdad *et al.*. One having ordinary skill in the art would have been motivated to do so because Sigal *et al.,* suggest that functionalized thiol is used to make a self-assembling monolayer (see column 8, second paragraph) and Bamdad *et al.,* have successfully made a self-assembling monolayer using one kind of functionalized thiol, alkyl thiol functional groups (see columns 9 and 10). One having ordinary skill in the art at the time the invention was made would have a reasonable expectation of success to make a self-assembling monolayer using one kind of functionalized thiol, alkyl thiol functional groups.

Response to Arguments

In page 7, first and second paragraphs of applicant's remarks, applicant argues that "[A]s argued herein, claim 18 is not obvious over Sigal in view of Meade and Roberts, Bamdad, directed toward derivatized surfaces for surface plasmon resonance experiments, does not cure the deficiencies of the references. Therefore, not all of the limitations of claim 21 are found in the cited references, and so a prima facie case of obviousness has not been established for claim 21";

These arguments have been fully considered but they are not persuasive toward the withdrawal of the rejection because the combination of Sigal *et al.,* Meade *et al.,* and Roberts *et al.,* does teach all limitations recited in claim 18 (see above Response to Arguments) and the patent from Bamdad *et al.,* is not used to cure the deficiencies of the references as argued by applicant.

5. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sigal *et al.,* in view of Meade *et al.,* and Roberts *et al.,* as applied to claims 18, 20, 24, and 27 above, and further in view of Gerpheide *et al.,* (US Patent No. 5,565,658, published on October 15, 1996).

The teachings of Sigal *et al.,* Meade *et al.,* and Roberts *et al.,* have been summarized previously, *supra.*

Sigal *et al.,* Meade *et al.,* and Roberts *et al.,* do not disclose that said substrate is a printed circuit board as recited in claim 22.

Gerpheide *et al.,* teach that the substrate of an electrode array is a printed circuit board (see Figure 3b).

Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to have made a composition as recited in claim 22 wherein said substrate is a printed circuit board in view of the patents of Sigal *et al.,* Meade *et al.,* Roberts *et al.,* and Gerpheide *et al.*. One having ordinary skill in the art would have been motivated to do so because Gerpheide *et al.,* have successfully used a printed circuit board as a substrate to make an array of electrodes and fabrication of electrodes on a printed circuit board would provide an economical and widely available way to make an array of electrodes (see

Gerpheide *et al.,* column 5, lines 39-48). One having ordinary skill in the art at the time the invention was made would have a reasonable expectation of success to use a printed circuit board as a substrate to make an array of electrodes.

Response to Arguments

In page 7, third and fourth paragraphs and page 11, last paragraph bridging to page 12, last paragraph of applicant's remarks, applicant argues that: (1) "[A]s argued herein, claim 18 is not obvious over *Sigal* in view *of Meade* and *Roberts, Gerpheide,* directed to apparatus and method for a capacitance-based proximity sensor with interference rejection, does not cure the deficiencies of the references. Therefore, not all of the limitations of claim 21 are found in the cited references, and so a *prima facie* case of obviousness has not been established for claim 21"; and (2) "[O]ne of skill in the art would understand that sheet metal and metal foil are not absorbent materials. Furthermore, one of skill in the art would understand that substrates used in flex circuits are preferably not absorptive. See Joseph Fjelstad, Flexible Circuit Technology 43 (3ded. 2007) (attached as Exhibit A in the previous response; 'Moisture absorption is definitely not desirable for any flexible substrate. Moisture can negatively impact both the manufacturing process (by causing delamination, in process or in assembly) and the performance of the finished product (by altering the material's dielectric constant and increasing signal loss.)') Therefore, *Gerpheide* explicitly teaches away from *Robers* because *Roberts* teaches that its device 'includes an absorbent material,' and in contrast, *Gerpheide* teaches that the electrode array may utilize a flexible printed circuit board, such as a flex circuit, or stampings of sheet metal".

These arguments have been fully considered but they are not persuasive toward the withdrawal of the rejection. First, the rejected claim in this rejection is claim 22 and is not claim

21 as argued by applicant. Second, the combination of Sigal *et al.,* Meade *et al.,* and Roberts *et al.,* does teach all limitations recited in claim 18 (see above Response to Arguments) and the patent from Gerpheide *et al.,* is not used to cure the deficiencies of the references as argued by applicant. Third, although the examiner agrees with applicant that "sheet metal and metal foil are not absorbent materials", the rejection is not based on the replacement of absorbent materials from sheet metal and metal foil as argued by applicant. Regarding the rejection of claim 18, Roberts *et al.,* teach advantages of fabricating small electrodes in interdigitated arrays (see column 7, last paragraph bridging to column 8, second paragraph), the examiner does not indicate that the array recited in claim 18 must comprise absorbent materials in the device of Roberts *et al.*.

6. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sigal *et al.,* in view of Meade *et al.,* and Roberts *et al.,* as applied to claims 18, 20, 24, and 27 above, and further in view of Kayyem *et al.,* (US Patent No. 6,096,273, filed on November 5, 1996).

The teachings of Sigal *et al.,* Meade *et al.,* and Roberts *et al.,* have been summarized previously, *supra.*

Sigal *et al.,* Meade *et al.,* and Roberts *et al.,* do not disclose that said electrodes are gold as recited in claim 23.

Kayyem *et al.,* teach to covalently attach nucleic acids (ie., binding ligands as recited in claim 18) to an electrode such as a gold electrode (see column 4 and Figure 4). The different materials such as gold, silicon, carbon and metal oxide are used to make electrodes and these electrodes are exchangeable (see column 20, lines 40-65).

Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to have made a composition as recited in claim 23 wherein said electrodes are gold in view of the patents of Sigal *et al.,* Meade *et al.,* Roberts *et al.,* and Kayyem *et al.*. One having ordinary skill in the art would have been motivated to do so because the simple replacement of one kind of electrode (ie., electrodes taught by Sigal *et al.,*) from another kind of electrode (ie., gold electrodes taught by Kayyem *et al.,*) during the process of making a composition recited in claim 23 would have been, in the absence of convincing evidence to the contrary, *prima facie* obvious to one having ordinary skill in the art at the time the invention was made since Kayyem *et al.,* suggest that electrodes are exchangeable (see column 20, lines 40-65),

Furthermore, the motivation to make the substitution cited above arises from the expectation that the prior art elements will perform their expected functions to achieve their expected results when combined for their common known purpose. Support for making the obviousness rejection comes from the M.P.E.P. at 2144.06, 2144.07, and 2144.09.

Also note that there is no invention involved in combining old elements is such a manner that these elements perform in combination the same function as set forth in the prior art without giving unobvious or unexpected results. *In re Rose* 220 F.2d. 459, 105 USPQ 237 (CCPA 1955).

7. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sigal *et al.,* in view of Meade *et al.,* and Roberts *et al.,* as applied to claims 18, 20, 24, and 27 above, and further in view of Kayyem *et al.,* (November 5, 1996).

The teachings of Sigal *et al.,* Meade *et al.,* and Roberts *et al.,* have been

summarized previously, *supra.*

Sigal *et al.,* Meade *et al.,* and Roberts *et al.,* do not disclose that said transition metal complex is ferrocene as recited in claim 25.

Kayyem *et al.,* teach that electron transfer moieties are different transition metal complexes such as ferrocene. These different transition metal complexes are exchangeable (see column 29, lines 31-42).

Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to have made a composition recited in claim 25 wherein said transition metal complex is ferrocene in view of the patents of Sigal *et al.,* Meade *et al.,* Roberts *et al.,* and Kayyem *et al.*. One having ordinary skill in the art would have been motivated to do so because Kayyem *et al.,* have successfully used ferrocene as an electron transfer moiety and the simple replacement of one kind of transition metal complex (ie., a transition metal complex taught by Sigal *et al.,*) from another kind of transition metal complex (ie., a transition metal complex such as ferrocene taught by Kayyem *et al.,*) as an electrode transfer moiety during the process of making a composition recited in claim 25 would have been, in the absence of convincing evidence to the contrary, *prima facie* obvious to one having ordinary skill in the art at the time the invention was made since Kayyem *et al.,* suggest that electron transfer moieties for attaching to a nucleic acid are exchangeable (see column 29, lines 31-42),

Furthermore, the motivation to make the substitution cited above arises from the expectation that the prior art elements will perform their expected functions to achieve their expected results when combined for their common known purpose. Support for making the obviousness rejection comes from the M.P.E.P. at 2144.06, 2144.07, and 2144.09.

Also note that there is no invention involved in combining old elements is such a manner that these elements perform in combination the same function as set forth in the prior art without giving unobvious or unexpected results. *In re Rose* 220 F.2d. 459, 105 USPQ 237 (CCPA 1955).

Response to Arguments

In page 8, first and second paragraph of applicant's remarks, applicant argues that "[T]he instant application 10/016,416 and Kayyem patent were, at the time the invention of 10/016,416 was made, owned by Clinical Micro Sensors, Inc. Therefore, according to U.S.C. § 103(c)(1), Kayyem cannot preclude patentability of the presently claimed invention under U.S.C. § 103".

These arguments have been fully considered but they are not persuasive toward the withdrawal of the rejection because the examiner cannot locate the assignment for this instant application. If applicant can provide an assignment to show that the instant application 10/016,416 and Kayyem patent were, at the time the invention of 10/016,416 was made, owned by Clinical Micro Sensors, Inc., the examiner agrees to withdraw the rejections on claims 23 and 25 based on the combination of Sigal et al., Meade et al., Roberts et al., and Kayyem et al..

8. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sigal *et al.,* in view of Meade *et al.,* and Roberts *et al.,* as applied to claims 18, 20, 24, and 27 above.

The teachings of Sigal *et al.,* Meade *et al.,* and Roberts *et al.,* have been summarized previously, *supra.*

Sigal *et al.,* and Roberts *et al.,* do not disclose that said electrodes are gold as recited in

claim 23. However, Meade *et al.,* teach that an electrode is made of conductive material such as gold, vitreous carbon, graphite, and other conductive materials and these electrodes are exchangeable (see column 9, lines 27-39).

Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to have made a composition as recited in claim 23 wherein said electrodes are gold in view of the patents of Sigal *et al.,* Meade *et al.,* and Roberts *et al.*. One having ordinary skill in the art would have been motivated to do so because the simple replacement of one kind of electrode (ie., electrodes taught by Sigal *et al.,*) from another kind of electrode (ie., gold electrodes taught by Meade *et al.,*) during the process of making a composition recited in claim 23 would have been, in the absence of convincing evidence to the contrary, *prima facie* obvious to one having ordinary skill in the art at the time the invention was made since Meade *et al.,* suggest that different electrodes are exchangeable (see column 9, lines 27-39).

Furthermore, the motivation to make the substitution cited above arises from the expectation that the prior art elements will perform their expected functions to achieve their expected results when combined for their common known purpose. Support for making the obviousness rejection comes from the M.P.E.P. at 2144.06, 2144.07, and 2144.09.

Also note that there is no invention involved in combining old elements is such a manner that these elements perform in combination the same function as set forth in the prior art without giving unobvious or unexpected results. *In re Rose* 220 F.2d. 459, 105 USPQ 237 (CCPA 1955).

9. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sigal *et al.,* in view of Meade *et al.,* and Roberts *et al.,* as applied to claims 18, 20, 24, and 27 above.

The teachings of Sigal *et al.,* Meade *et al.,* and Roberts *et al.,* have been summarized previously, *supra.*

Sigal *et al.,* and Roberts *et al.,* do not disclose that said transition metal complex is ferrocene as recited in claim 25.

Meade *et al.,* teach that electron transfer moieties are different transition metal complexes such as ferrocene. These different transition metal complexes are exchangeable (see column 25, lines 7-20).

Therefore, it would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to have made a composition recited in claim 25 wherein said transition metal complex is ferrocene in view of the patents of Sigal *et al.,* Meade *et al.,* and Roberts *et al.*. One having ordinary skill in the art would have been motivated to do so because Meade *et al.,* have successfully used ferrocene as an electron transfer moiety and the simple replacement of one kind of transition metal complex (ie., a transition metal complex taught by Sigal *et al.,*) from another kind of transition metal complex (ie., a transition metal complex such as ferrocene taught by Meade *et al.,*) as an electrode transfer moiety during the process of making a composition recited in claim 25 would have been, in the absence of convincing evidence to the contrary, *prima facie* obvious to one having ordinary skill in the art at the time the invention was made since Meade *et al.,* suggest that electron transfer moieties for attaching to a nucleic acid are exchangeable (see column 25, lines 7-20).

Furthermore, the motivation to make the substitution cited above arises from the expectation that the prior art elements will perform their expected functions to achieve their expected results when combined for their common known purpose. Support for making the obviousness rejection comes from the M.P.E.P. at 2144.06, 2144.07, and 2144.09.

Also note that there is no invention involved in combining old elements is such a manner that these elements perform in combination the same function as set forth in the prior art without giving unobvious or unexpected results. *In re Rose* 220 F.2d. 459, 105 USPQ 237 (CCPA 1955).

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. No claim is allowed.

12. Papers related to this application may be submitted to Group 1600 by facsimile transmission. Papers should be faxed to Group 1600 via the PTO Fax Center. The faxing of

such papers must conform with the notices published in the Official Gazette, 1096 OG 30 (November 15, 1988), 1156 OG 61 (November 16, 1993), and 1157 OG 94 (December 28, 1993)(See 37 CAR § 1.6(d)). The CM Fax Center number is (571)273-8300.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Frank Lu, Ph.D., whose telephone number is (571)272-0746. The examiner can normally be reached on Monday-Friday from 9 A.M. to 5 P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla, can be reached on (571)272-0735.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to (571) 272-0547.

/Frank W Lu /
Primary Examiner, Art Unit 1634
May 22, 2008

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/016,416	BAMDAD ET AL.	
	Examiner	Art Unit	
	FRANK W. LU	1634	